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Title: ROUTING OF CALL FORWARDING ACCORDING TO BASIC SERVICES

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BRIEF ON APPEAL

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I. INTRODUCTION

This Appeal is from an Office Action mailed April 21, 2004, finally rejecting claims 1-22 of the above-identified application.

A. Real Party in Interest

The real party in interest for this Appeal and the present application is Nokia Networks Oy, by way of an Assignment recorded on October 11, 2001, in the U.S. Patent and Trademark Office at Reel 012249, Frame 0913.

B. Statement of Related Appeals and Interferences

There are presently no appeals or interferences known to Appellant, Appellant's representatives, or the Assignee, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

C. Status of Claims

Claims 1-22 are pending. Claims 1-22 stand rejected and are on appeal. The claims on appeal are set forth in the attached Appendix. Claims 1, 2, 4, 5, 7, and 11 are independent. Claims 15 and 22 depend from claim 1; claims 3 and 16 depend from claim 2; claim 17 depends from claim 4; claims 6, 20, and 21 depend from claim 5; claims 8-10 and 18 depend from claim 7; and claims 12-14 and 19 depend from claim 11.

D. Status of Amendments

An Amendment was filed in the U.S. Patent and Trademark Office on January 3, 2002. Additional Amendments were filed on April 29, 2002 and April 18, 2003. All claim amendments have been entered and are of record.

II. SUMMARY OF CLAIMED SUBJECT MATTER

A. Features of the Invention

The invention relates to methods and equipment for implementing call forwarding in a mobile system. In various claimed embodiments, routing of a call to a forwarding number is performed by selecting one among alternative lines of different qualities based on a basic service code.

B. The Independent Claims on Appeal

Claim 1

Independent claim 1 recites a method for implementing call forwarding in a mobile system. The system includes at least one forwarding exchange for carrying out call forwarding via one of several alternative types of lines on the basis of subscriber data related to the call forwarding, each type of line having different qualities, and at least one subscriber database for storing the subscriber data related to the call forwarding. The method includes (1) receiving at the forwarding exchange a call set-up message addressed to a subscriber in the mobile system; (2) performing a subscriber data request to the subscriber database; (3) transmitting a response message from the subscriber database to the forwarding exchange, the message comprising data indicating the call forwarding, a forwarding number and the basic service code; and (4) implementing call routing to the forwarding number by selecting one of the alternative types of lines based on the basic service code. (Specification at page 5, lines 5-9; page 11, line 20 through page 12, line 5; FIG. 8.)

Claim 2

Independent claim 2 recites a method for implementing call forwarding in a mobile system. The system includes at least a first exchange for carrying out call forwarding via one of several alternative types of lines on the basis of subscriber data related to the call forwarding, and at least one home location register connected to the first exchange for storing the subscriber data related to the call forwarding, each type of line having different qualities. The method includes (1) receiving at the first exchange a call set-up message addressed to a subscriber in the mobile system; (2) requesting routing information from the home location register; (3) transmitting a response message from the home location register to the first

exchange, the message comprising data indicating the call forwarding, a forwarding number, and a basic service code indicating the basic service related to the call; and (4) implementing call routing to the forwarding number by selecting one of the alternative types of lines based on the basic service code. (Specification at page 5, lines 5-9; page 11, line 20 through page 12, line 5; FIG. 8.)

Claim 4

Independent claim 4 recites a method for implementing call forwarding in a mobile system. The system includes at least one exchange for carrying out call forwarding via one of several alternative types of lines on the basis of subscriber data related to the call forwarding, and at least one visitor location register for storing the subscriber data related to the call forwarding, each type of line having different qualities. The method includes (1) receiving at the exchange a call set-up message addressed to a subscriber in the mobile system; (2) providing a subscriber data request to the visitor location register connected to the exchange; (3) transmitting a response message from the visitor location register to the exchange, the message comprising data indicating the call forwarding, a forwarding number and a basic service code; and (4) implementing call routing to the forwarding number by selecting one of the alternative types of lines based on the basic service code. (Specification at page 5, lines 5-9; page 11, line 20 through page 12, line 5; FIG. 8.)

Claim 5

Independent claim 5 is directed to a home location register connected to a first exchange in a mobile system. The home location register is arranged to transmit a basic service code to the first exchange in connection with a response message to a routing information request. The basic service code indicates the necessary properties of the line

which should be selected from several alternative types of lines having different properties in routing the call. (Specification at page 5, lines 5-9; page 11, line 20 through page 12, line 5; FIG. 8.)

Claim 7

Independent claim 7 is directed to a first exchange in a mobile system. The first exchange comprises means for transferring a call to a forwarding number via one of several alternative types of lines, each type of line having different qualities. The exchange is arranged to derive a basic service code from the call-set up message or from a response message transmitted by the home location register to the first exchange in response to a subscriber data request. The exchange is further arranged to route the call to the forwarding number by selecting one of the alternative types of lines based on the basic service code. (Specification at page 5, lines 5-9; page 11, line 20 through page 12, line 5; FIG. 8.)

The “means for transferring a call” are to be construed under 35 U.S.C. § 112, ¶ 6. (For corresponding structure, see Specification, e.g., at page 9, lines 13-15; page 11, lines 16-19; and GMSC in Figs. 4 and 6.)

Claim 11

Independent claim 11 is directed to an exchange in a mobile system. The exchange comprises means for transferring a call to a forwarding number via one of several alternative types of lines, each type of line having different qualities. The exchange is arranged to derive a basic service code from basic service data that indicates the basic service of the call and that is transmitted in connection with the call set-up message or a response message transmitted from the visitor location register to the exchange in response to a subscriber data request. The exchange is further arranged to perform routing to the forwarding number by selecting one of

the alternative types of lines based on the basic service code. (Specification at page 5, lines 5-9; page 11, line 20 through page 12, line 5; FIG. 8.)

The “means for transferring a call” are to be construed under 35 U.S.C. § 112, ¶ 6. (For corresponding structure, see Specification, e.g., at page 9, lines 13-15; page 11, lines 16-19; and GMSC in Figs. 4 and 6.)

III. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

In the April 21, 2004 Final Office Action, claims 1-14, 21, and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Joong et al. (U.S. Patent No. 6,134,433; hereafter “Joong”) in view of Le Strat et al. (U.S. Patent No. 6,134,220; hereafter “Le Strat”). Claims 15-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Joong, Le Strat, and Seraj (U.S. Patent No. 5,388,095; hereafter “Seraj”).

Thus, the grounds of rejection to be reviewed on appeal are:

- 1) Whether claims 1-14, 21, and 22 are obvious under 35 U.S.C. § 103(a) over Joong in view of Le Strat; and
- 2) Whether claims 15-20 are obvious under 35 U.S.C. § 103(a) over Joong, Le Strat, and Seraj.

IV. ARGUMENT

A. The Law Regarding Factual Inquiries to Determine

Obviousness/Nonobviousness Under 35 U.S.C. § 103(a)

Several basic factual inquiries must be made to determine obviousness or non-obviousness of patent application claims under 35 U.S.C. § 103. These factual inquiries are set forth in Graham v. John Deere Co., 383 US 1, 17, 148 USPQ 459, 467 (1966):

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or non-obviousness of the subject matter is determined.

Application of this test, however, involves a factual inquiry. As stated by the Federal Court in In re Ochiai, 71 F.3d 1565, 37 USPQ2d 1127, 1131 (Fed. Cir. 1995):

[T]he test of obviousness *vel non* is statutory. It requires that one compare the claim's subject matter as a whole with the prior art to which the subject matter pertains. 35 U.S.C. § 103.

The inquiry is thus highly fact-specific by design.... When the references cited by the Examiner fail to establish a *prima facie* case of obviousness, the rejection is improper and will be overturned. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988) (emphasis added).

In rejecting claims under 35 U.S.C. § 103(a), an Examiner bears an initial burden of presenting a *prima facie* case of obviousness. A *prima facie* case of obviousness is established only if there is a suggestion or motivation to combine reference teachings; a reasonable expectation of success; and the prior art references, when combined, teach or suggest all the claim limitations. If an Examiner fails to establish a *prima facie* case, a rejection is improper and will be overturned. See In re Rijckaert, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993). "If examination ... does not produce a *prima facie* case of unpatentability, then without more, the Applicant is entitled to the grant of the patent." In re Oetiker, 977 F.2d 1443, 1445-46, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

B. Rejections Under 35 U.S.C. § 103(a)

1. The Cited References

a) Joong (U.S. Patent No. 6,134,433)

Joong teaches a system and method of providing service differentiation for call forwarding based upon the type of call. The system provides network support that allows the forwarding of calls of different types to appropriate devices for each type of call, as identified by the call's service code. For example, a service type parameter 23 may have values for a CDMA Service Option 23a, a TDMA Service Code 23b, or other air interface. (Abstract; col. 7, line 63 to col. 8, line 2; FIG. 4.)

b) Le Strat (U.S. Patent No. 6,134,220)

Le Strat teaches a mobile radio system that enables exchange of bidirectional digital signals between at least one mobile station and at least one base transceiver station and provides at least two coding modes. Each mode corresponds to a predetermined source code and a predetermined channel code for the transmission of a wanted signal for each transmission direction. For each transmission direction, one of the coding modes is selected

based on a transmission quality analysis performed in each station. (Abstract; col. 9, lines 15-36.)

c) Seraj (U.S. Patent No. 5,388,095)

Seraj teaches methods for representing subscribers in a multiple interface environment switching system. (Abstract; col. 3, lines 19-28.) In particular, sub-addressing within ISDN messages sent through a telecommunications switch may be used to identify subscribers. (Abstract; col. 2, lines 24-51.)

2. Claims 1-14, 21, and 22 Are Not Obvious over Joong in view of Le Strat

a) Claims 1-4, 7, 8, 11, 12, and 22

Appellant respectfully submits that Joong fails to describe at least one of the features recited by claim 1. Specifically, Joong fails to teach or suggest implementing call routing to a forwarding number by selecting, based on a basic service code, one of several alternative types of lines of different qualities. In fact, Joong may be said to teach away from this feature since it focuses on an apparatus where a call of a particular type is routed to a number capable of handling that call type, irrespective of line quality. Le Strat fails to cure this deficiency. As a result, Appellant respectfully submits that claim 1 is patentable over Joong and Le Strat.

(1) Joong and Le Strat do not teach or suggest implementing call routing to a forwarding number by selecting, based on a basic service code, one of several alternative types of lines of different qualities

Independent claim 1 recites, inter alia, “[a] method for implementing call forwarding in a mobile system comprising at least one forwarding exchange for carrying out call forwarding via one of several alternative types of lines on the basis of subscriber data related to the call forwarding, each type of line having different qualities.” Claim 1 further recites “implementing call routing to the forwarding number by selecting one of said alternative types of lines based on the basic service code.”

Contrary to the Examiner’s assertions, Joong does not teach or suggest such a feature. Instead, Joong merely teaches that particular lines are respectively associated with particular call types, such as analog speech, digital speech, asynchronous data, and G3 fax. Based on a

service code indicative of the applicable call type, an incoming call is routed to a particular line capable of handling that call type. (Abstract.) In particular, Joong discloses that:

The present invention is a system and method of providing service differentiation for *call forwarding based upon the type of call*. The present invention provides network support that *allows the forwarding of calls of different types to appropriate devices for each type of call, as identified by the call's service code*. (Col. 2, lines 60-65; emphasis added.)

However, Joong in no way teaches or suggests call forwarding by selecting a suitable line among several alternative lines of different quality based on a service code. Joong clearly does not contemplate the provision of alternative lines of different quality to which a call alternately can be routed. Instead, a call is simply forwarded to a particular line based on the type of the call. More specifically, Joong discloses:

For example, the present invention determines whether the call is a data call, and if it is a data call, the present invention provides the network support for forwarding the call to a different number than voice calls. For example, an incoming call identified as a G3Fax call is transferred to an alternate fax machine or a fax mailbox, or some other device capable of storing the data rather than a voice mailbox. The present invention is applicable to forwarding any type of service other than voice, and is not limited to ADS and G3 Fax calls. (Col. 2, line 65 to col. 3, line 7; emphasis added.)

Therefore, Joong is only concerned with routing a call to a line appropriate to the type of the call. Joong further discloses that:

[T]here are, for example, several service codes corresponding to speech. For example, there are service codes identifying analog speech or digital speech, and analog or digital speech (analog preferred or digital preferred). There are also service codes for several types of data such as asynchronous data and G3 Fax. (Col. 8, lines 50-55.)

Thus, by teaching that calls are forwarded to the line appropriate to the type of call based on a service code, Joong, in fact, may be said to teach away from the claimed invention, wherein a call is forwarded to one of several alternative lines of different qualities based on a service code. The forwarding of a call to the particular line capable of handling the type of call is markedly different from the forwarding of a call to one among alternative lines of different qualities. Accordingly, Appellant respectfully submits that Joong cannot properly establish a foundation for the rejection under 35 U.S.C. § 103(a).

The Examiner turned to Le Strat to provide a teaching that each type of line has different qualities. The Examiner's reliance on this reference, however, was misplaced. Even if one of ordinary skill in the art had applied the teachings of Le Strat to the system of Joong, Joong and Le Strat in combination do not teach all the features of claim 1. Le Strat teaches that selection of a transmission mode should be carried out such that the mobile station and the base station both transmit signals to each other and carry out quality measurements to determine if the signal quality with the implemented transmission mode is suitable. If that mode is determined by the base station to be unsuitable based on the signal quality measurements, the base station makes a decision to change the transmission mode. (See, e.g., col. 10, lines 1-19.) Thus, Le Strat teaches away from the claimed invention, wherein routing is performed to the forwarding number by selecting one of the alternative lines with different qualities based on the basic service code, not based on signal quality measurements as in Le Strat.

As such, the result of the combination of Joong and Le Strat is the Joong call routing system modified to include a transmission mode selection component dependent upon signal quality measurements. Therefore, the combined teachings of Joong and Le Strat fail to teach or suggest, inter alia, "[a] method for implementing call forwarding in a mobile system comprising at least one forwarding exchange for carrying out call forwarding via one of several alternative types of lines on the basis of subscriber data related to the call forwarding, each type of line having different qualities," and "implementing call routing to the forwarding number by selecting one of said alternative types of lines based on the basic service code," as recited by independent claim 1. Because the combined teachings of Joong and Le Strat do not teach or suggest all the features of claim 1, the Examiner has failed to present a prima facie case of obviousness against claim 1, and the rejection must be withdrawn.

(2) A person of ordinary skill in the art would not have combined Joong with Le Strat

Moreover, one of ordinary skill in the art would not have looked to Le Strat for teachings on call routing to a forwarding number. Unlike Joong and the claimed invention, which relate generally to call routing, and, more specifically, to call forwarding from an exchange, Le Strat does not at all relate to call routing. To the contrary, Le Strat is merely directed to a solution for selecting a transmission mode (i.e., a coding mode) for a radio path between a mobile station and a base station. Such a solution is fundamentally different from

a call routing solution. Accordingly, a person skilled in the art would have no motivation to study Le Strat to solve issues related to call routing to a forwarding number, and to combine the teachings of Le Strat with those of Joong.

Claim 22 depends from claim 1. For at least the above reasons, claim 22 is patentable over Joong and Le Strat, and the rejection must be withdrawn.

Independent claim 2 recites features similar to those recited by independent claim 1. Appellant respectfully submits that Joong fails to describe at least one feature recited by claim 2. In particular, Joong fails to teach or suggest implementing call routing to a forwarding number by selecting, based on a basic service code, one of several alternative types of lines of different qualities. In fact, Joong may be said to teach away from this feature since it focuses on an apparatus where a call of a particular type is routed to a number capable of handling that call type, irrespective of line quality. Le Strat fails to cure this deficiency. As a result, and for at least the reasons discussed above in connection with claim 1, Appellant respectfully submits that claim 2 is patentable over Joong and Le Strat.

Claim 3 depends from claim 2. For at least the above reasons, claim 3 is patentable over Joong and Le Strat, and the rejection must be withdrawn.

Independent claim 4 recites features similar to those recited by independent claim 1. Appellant respectfully submits that Joong fails to describe at least one feature recited by claim 4. In particular, Joong fails to teach or suggest implementing call routing to a forwarding number by selecting, based on a basic service code, one of several alternative types of lines of different qualities. In fact, Joong may be said to teach away from this feature since it focuses on an apparatus where a call of a particular type is routed to a number capable of handling that call type, irrespective of line quality. Le Strat fails to cure this deficiency. As a result, and for at least the reasons discussed above in connection with claim 1, Appellant respectfully submits that claim 4 is patentable over Joong and Le Strat.

Independent claim 7 recites features similar to those recited by independent claim 1. Appellant respectfully submits that Joong fails to describe at least one feature recited by claim 7. In particular, Joong fails to teach or suggest an exchange arranged to route a call to a forwarding number by selecting, based on a basic service code, one of several alternative types of lines of different qualities. In fact, Joong may be said to teach away from this feature since it focuses on an apparatus where a call of a particular type is routed to a number capable of handling that call type, irrespective of line quality. Le Strat fails to cure this deficiency.

As a result, and for at least the reasons discussed above in connection with claim 1, Appellant respectfully submits that claim 7 is patentable over Joong and Le Strat.

Claim 8 depends from claim 7. For at least the above reasons, claim 8 is patentable over Joong and Le Strat, and the rejection must be withdrawn.

Independent claim 11 recites features similar to those recited by independent claim 1. Appellant respectfully submits that Joong fails to describe at least one feature recited by claim 11. In particular, Joong fails to teach or suggest an exchange arranged to perform routing of a call to a forwarding number by selecting, based on a basic service code, one of several alternative types of lines of different qualities. In fact, Joong may be said to teach away from this feature since it focuses on an apparatus where a call of a particular type is routed to a number capable of handling that call type, irrespective of line quality. Le Strat fails to cure this deficiency. As a result, and for at least the reasons discussed above in connection with claim 1, Appellant respectfully submits that claim 11 is patentable over Joong and Le Strat.

Claim 12 depends from claim 11. For at least the above reasons, claim 12 is patentable over Joong and Le Strat, and the rejection must be withdrawn.

b) Claims 9 and 13

Claims 9 and 13 depend respectively from claims 7 and 11, and add that the forwarding number is the number of a Voice Mail Service center having several lines, and that the exchange is arranged to transfer the call to the Voice Mail Service center via a line selected for the transfer according to the basic service code. This feature is neither taught nor suggested by Joong or Le Strat. Joong merely discloses that the gateway mobile switching center (G-MSC) or originating mobile switching center (O-MSC) 12 is connected to network nodes such as voice mail system (VMS) 13 and a data message center (MC) 14. There is no teaching or suggestion in Joong that the VMS 13 has several lines, wherein a call is transferred to the VMS 13 via a line selected for the transfer according to the basic service code. (Col. 4, lines 30-44.) Further, Le Strat does not contain any teaching or suggestion relating to voice mail centers. As such, neither reference provides any discussion that supports the Examiner's rejection of claims 9 and 13 as obvious. Moreover, since claims 9 and 13 depend respectively from claims 7 and 11, and since claims 7 and 11 are patentable over the cited references for the reasons set forth above, claims 9 and 13 also must be patentable over the art cited by the Examiner.

c) Claims 10 and 14

Claims 10 and 14 depend respectively from claims 7 and 11, and add that the exchange is arranged to subject the forwarding number to a conversion selected according to the basic service code. This feature is neither taught nor suggested by Joong or Le Strat. Joong merely discloses that the type of call may be identified directly from the ISDN User Part, User Service Information (USI) field which is mapped from the Bearer Capability Indicator (BCI) provided by the calling party. Joong also merely discloses that transfer numbers are administered via commands and procedures. (Col. 6, lines 21-43.) Similarly, Le Strat does not contain any teaching or suggestion relating to subjecting a forwarding number to a conversion. As such, neither reference provides any discussion that supports the Examiner's rejection of claims 10 and 14 as obvious. Moreover, since claims 10 and 14 depend respectively from claims 7 and 11, and since claims 7 and 11 are patentable over the cited references for the reasons set forth above, claims 10 and 14 also must be patentable over the art cited by the Examiner.

d) Claims 5, 6, and 21

Appellant respectfully submits that Joong fails to describe at least one of the features recited by claim 5. Specifically, Joong fails to teach or suggest a home location register arranged to transmit a basic service code indicating the necessary properties of a line which should be selected for call routing from several alternative types of lines having different properties. In fact, Joong may be said to teach away from this feature since it focuses on an apparatus where a call of a particular type is routed to a number capable of handling that call type, irrespective of line properties. Le Strat fails to cure this deficiency. As a result, Appellant respectfully submits that claim 5 is patentable over Joong and Le Strat.

(1) Joong does not teach or suggest a home location register arranged to transmit a basic service code indicating the necessary properties of a line which should be selected from several alternative types of lines having different properties

Independent claim 5 recites, inter alia, "[a] home location register ... arranged to transmit a basic service code ... indicating the necessary properties of the line which should be selected from several alternative types of lines having different properties in routing the call."

Contrary to the Examiner's assertions, Joong does not teach or suggest such a feature. Instead, Joong merely teaches that particular lines are respectively associated with particular call types, such as analog speech, digital speech, asynchronous data, and G3 fax. Based on a service code indicative of the applicable call type, an incoming call is routed to a particular line capable of handling that call type. (Abstract.) In particular, Joong discloses that:

The present invention is a system and method of providing service differentiation for *call forwarding based upon the type of call*. The present invention provides network support that *allows the forwarding of calls of different types to appropriate devices for each type of call, as identified by the call's service code*. (Col. 2, lines 60-65; emphasis added.)

However, Joong does not teach or suggest a home location register arranged to transmit a basic service code indicating the necessary properties of a line which should be selected from several alternative types of lines having different properties. Joong clearly does not contemplate the provision of alternative lines of different properties to which a call alternately can be routed. Instead, a call is simply forwarded to a particular line based on the type of the call. More specifically, Joong discloses:

For example, the present invention determines whether the call is a data call, and if it is a data call, the present invention provides the network support for forwarding the call to a different number than voice calls. For example, an incoming call identified as a G3Fax call is transferred to an alternate fax machine or a fax mailbox, or some other device capable of storing the data rather than a voice mailbox. The present invention is applicable to forwarding any type of service other than voice, and is not limited to ADS and G3 Fax calls. (Col. 2, line 65 to col. 3, line 7; emphasis added.)

Therefore, Joong is only concerned with routing a call to a line appropriate to the type of the call. Joong further discloses that:

[T]here are, for example, several service codes corresponding to speech. For example, there are service codes identifying analog speech or digital speech, and analog or digital speech (analog preferred or digital preferred). There are also service codes for several types of data such as asynchronous data and G3 Fax. (Col. 8, lines 50-55.)

Thus, by teaching that calls are forwarded to the line appropriate to the type of call based on a service code, Joong, in fact, may be said to teach away from the claimed invention, wherein a call is forwarded to one of several alternative lines of different properties based on

a service code. The forwarding of a call to the particular line capable of handling the type of call is markedly different from the forwarding of a call to one among alternative lines of different properties. Accordingly, Appellant respectfully submits that Joong cannot properly establish a foundation for the rejection under 35 U.S.C. § 103(a).

The Examiner turned to Le Strat to attempt to remedy the deficiencies of Joong. The Examiner's reliance on this reference, however, was misplaced. Even if one of ordinary skill in the art had applied the teachings of Le Strat to the system of Joong, Joong and Le Strat in combination do not teach all the features of claim 5. Le Strat teaches that selection of a transmission mode should be carried out such that the mobile station and the base station both transmit signals to each other and carry out quality measurements to determine if the signal quality with the implemented transmission mode is suitable. If that mode is determined by the base station to be unsuitable based on the signal quality measurements, the base station makes a decision to change the transmission mode. (See, e.g., col. 10, lines 1-19.) By performing routing based on signal quality measurements, Le Strat teaches away from the claimed invention, wherein the home location register is arranged to transmit a basic service code indicating the necessary properties of a line to be selected for routing from among several alternative lines having different properties.

As such, the result of the combination of Joong and Le Strat is the Joong call routing system modified to include a transmission mode selection component dependent upon signal quality measurements. Therefore, the combined teachings of Joong and Le Strat fail to teach or suggest, inter alia, "[a] home location register ... arranged to transmit a basic service code ... indicating the necessary properties of the line which should be selected from several alternative types of lines having different properties in routing the call," as recited by independent claim 5. Because the combined teachings of Joong and Le Strat do not teach or suggest all the features of claim 5, the Examiner has failed to present a prima facie case of obviousness against claim 5, and the rejection must be withdrawn.

(2) A person of ordinary skill in the art would not have combined Joong with Le Strat

Moreover, one of ordinary skill in the art would not have looked to Le Strat for teachings on call routing to a forwarding number. Unlike Joong and the claimed invention, which relate generally to call routing, and, more specifically, to call forwarding from an exchange, Le Strat does not at all relate to call routing. To the contrary, Le Strat is merely

directed to a solution for selecting a transmission mode (i.e., a coding mode) for a radio path between a mobile station and a base station. Such a solution is fundamentally different from a call routing solution. Accordingly, a person skilled in the art would have no motivation to study Le Strat to solve issues related to call routing to a forwarding number, and to combine the teachings of Le Strat with those of Joong.

Claim 6 depends from claim 5. For at least the above reasons, claim 6 is patentable over Joong and Le Strat, and the rejection must be withdrawn.

Claim 21 depends from claim 5. For at least the above reasons, claim 21 is patentable over Joong and Le Strat, and the rejection must be withdrawn.

3. Claims 15-20 Are Not Obvious over Joong, Le Strat, and Seraj

a) Claims 15-19

Claim 15 depends from claim 1. Seraj fails to remedy the deficiencies of Joong and Le Strat with respect to claim 1. For at least the above reasons, claim 15 is patentable over Joong, Le Strat, and Seraj, and the rejection must be withdrawn.

Claim 16 depends from claim 2. Seraj fails to remedy the deficiencies of Joong and Le Strat with respect to claim 2. For at least the above reasons, claim 16 is patentable over Joong, Le Strat, and Seraj, and the rejection must be withdrawn.

Claim 17 depends from claim 4. Seraj fails to remedy the deficiencies of Joong and Le Strat with respect to claim 4. For at least the above reasons, claim 17 is patentable over Joong, Le Strat, and Seraj, and the rejection must be withdrawn.

Claim 18 depends from claim 7. Seraj fails to remedy the deficiencies of Joong and Le Strat with respect to claim 7. For at least the above reasons, claim 18 is patentable over Joong, Le Strat, and Seraj, and the rejection must be withdrawn.

Claim 19 depends from claim 11. Seraj fails to remedy the deficiencies of Joong and Le Strat with respect to claim 11. For at least the above reasons, claim 19 is patentable over Joong, Le Strat, and Seraj, and the rejection must be withdrawn.

b) Claim 20

Claim 20 depends from claim 5. Seraj fails to remedy the deficiencies of Joong and Le Strat with respect to claim 5. For at least the above reasons, claim 20 is patentable over Joong, Le Strat, and Seraj, and the rejection must be withdrawn.

V. CONCLUSION

For at least the reasons discussed above, it is respectfully submitted that claims 1-22 are not obvious over the cited references. For the above reasons, Appellant respectfully requests this Honorable Board to reverse the rejection of the claims.

Respectfully submitted,

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VI. APPENDIX

Claims 1-22 are as follows:

1. A method for implementing call forwarding in a mobile system comprising at least one forwarding exchange for carrying out call forwarding via one of several alternative types of lines on the basis of subscriber data related to the call forwarding, each type of line having different qualities, and at least one subscriber database for storing the subscriber data related to the call forwarding, the method comprising:

receiving at the forwarding exchange a call set-up message addressed to a subscriber in the mobile system;

performing a subscriber data request to the subscriber database;

transmitting a response message from the subscriber database to the forwarding exchange, the message comprising data indicating the call forwarding, a forwarding number and the basic service code; and

implementing call routing to the forwarding number by selecting one of said alternative types of lines based on the basic service code.

2. A method for implementing call forwarding in a mobile system comprising at least a first exchange for carrying out call forwarding via one of several alternative types of lines on the basis of subscriber data related to the call forwarding and at least one home location register connected to the first exchange for storing the subscriber data related to the call forwarding, each type of line having different qualities, the method comprising:

receiving at the first exchange a call set-up message addressed to a subscriber in the mobile system;

requesting routing information from the home location register;

transmitting a response message from the home location register to the first exchange, the message comprising data indicating the call forwarding, a forwarding number, and a basic service code indicating the basic service related to the call; and

implementing call routing to the forwarding number by selecting one of said alternative types of lines based on said basic service code.

3. A method according to claim 2, wherein the basic service code is forwarded from the home location register to the first exchange via an extension added to the response message Send_Routing_Info_RES to the routing information request.

4. A method for implementing call forwarding in a mobile system comprising at least one exchange for carrying out call forwarding via one of several alternative types of lines on the basis of subscriber data related to the call forwarding and at least one visitor location register for storing the subscriber data related to the call forwarding, each type of line having different qualities, the method comprising:

receiving at the exchange a call set-up message addressed to a subscriber in the mobile system;

providing a subscriber data request to the visitor location register connected to the exchange;

transmitting a response message from the visitor location register to the exchange, the message comprising data indicating the call forwarding, a forwarding number and a basic service code; and

implementing call routing to the forwarding number by selecting one of said alternative types of lines based on the basic service code.

5. A home location register connected to a first exchange in a mobile system, wherein the home location register is arranged to transmit a basic service code to the first exchange in connection with a response message to a routing information request, the basic service code indicating the necessary properties of the line which should be selected from several alternative types of lines having different properties in routing the call.

6. A home location register according to claim 5, wherein the home location register is arranged to forward the basic service code to the first exchange by means of an extension added to the response message Send_Routing_Info_RES to the routing information request.

7. A first exchange in a mobile system, comprising means for transferring a call to a forwarding number via one of several alternative types of lines, each type of line having different qualities, wherein the exchange is arranged to derive a basic service code from the call-set up message or from a response message transmitted by the home location register to the first exchange in response to a subscriber data request; and

the exchange is arranged to route the call to the forwarding number by selecting one of said alternative types of lines based on the basic service code.

8. An exchange according to claim 7, wherein the exchange is arranged to receive the basic service code in an extension added to the response message Send_Routing_Info_RES to the routing information request.

9. An exchange according to claim 7, wherein said forwarding number is the number of a Voice Mail Service center having several lines, and that said exchange is arranged to transfer the call to the Voice Mail Service center via a line selected for the transfer according to the basic service code.

10. An exchange according to claim 7, wherein the exchange is arranged to subject the forwarding number to a conversion selected according to the basic service code.

11. An exchange in a mobile system, comprising means for transferring a call to a forwarding number via one of several alternative types of lines, each type of line having different qualities, wherein the exchange is arranged to derive a basic service code from basic service data that indicates the basic service of the call and that is transmitted in connection with the call set-up message or a response message transmitted from the visitor location register to the exchange in response to a subscriber data request, and

the exchange is arranged to perform routing to the forwarding number by selecting one of said alternative types of lines based on said basic service code.

12. An exchange according to claim 11, wherein the exchange is arranged to derive the basic service code at least on the basis of the bearer capability information element contained in the basic service data.

13. An exchange according to claim 11, wherein said forwarding number is the number of a Voice Mail Service center having several lines, and that said exchange is

arranged to transfer the call to the Voice Mail Service center via a line selected for the transfer according to the basic service code.

14. An exchange according to claim 11, wherein the exchange is arranged to subject the forwarding number to a conversion selected according to the basic service code.

15. A method according to claim 1, wherein the basic service includes different call types for the subscriber and wherein the different call types have a single called party number.

16. A method according to claim 2, wherein the basic service includes different call types for the subscriber and wherein the different call types have a single called party number.

17. A method according to claim 4, wherein the basic service code indicates a basic service including different call types for the subscriber related to the call and wherein the different call types have a single called party number.

18. A first exchange according to claim 7, wherein the basic service code indicates a basic service including different call types for a subscriber related to the call and wherein the different call types have a single called party number.

19. An exchange according to claim 11, wherein the basic service includes different call types for a subscriber related to the call and wherein the different call types have a single called party number.

20. A home location register according to claim 5, wherein the basic service code further indicates a basic service including different call types for the subscriber related to the call and wherein the different call types have a single called party number.

21. A home location register according to claim 5, wherein the necessary properties include at least one of line quality, line capacity and line cost.

22. A method according to claim 1, wherein the selecting of the alternative types of lines is based on at least one of line quality, line capacity and line cost.



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FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 330.00

Complete if Known

Application Number	09/446,508
Filing Date	December 27, 1999
First Named Inventor	KEIJO PALVIAINEN
Examiner Name	Temica M. Davis
Art Unit	2681
Attorney Docket No.	060258-0265414

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

Deposit Account Number: 033975
Deposit Account Name: PILLSBURY WINTHROP LLP

The Director is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Credit any overpayments
☐ Charge any additional fee(s) or any underpayment of fee(s)
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FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1001 770	2001 385	Utility filing fee	
1002 340	2002 170	Design filing fee	
1003 530	2003 265	Plant filing fee	
1004 770	2004 385	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	
SUBTOTAL (1) (\$)			0.00

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims: 22 -20** = 0 X Fee from below = 0
Independent Claims: 6 X 3** = 0 X Fee from below = 0
Multiple Dependent: -6** = 0 X Fee from below = 0

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1202 18	2202 9	Claims in excess of 20	
1201 86	2201 43	Independent claims in excess of 3	
1203 290	2203 145	Multiple dependent claim, if not paid	
1204 86	2204 43	** Reissue independent claims over original patent	
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent	
SUBTOTAL (2) (\$)			0.00

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for ex parte reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	
1252 420	2252 210	Extension for reply within second month	
1253 950	2253 475	Extension for reply within third month	
1254 1,480	2254 740	Extension for reply within fourth month	
1255 2,010	2255 1,005	Extension for reply within fifth month	
1401 330	2401 165	Notice of Appeal	
1402 330	2402 165	Filing brief in support of an appeal	330.00
1403 290	2403 145	Request for oral hearing	
1451 1,510	1451 1,510	Petition to institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,330	2453 665	Petition to revive - unintentional	
1501 1,330	2501 665	Utility issue fee (or reissue)	
1502 480	2502 240	Design issue fee	
1503 640	2503 320	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)	
1806 180	1806 180	Submission of Information Disclosure Stmt	
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	
1809 770	2809 385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810 770	2810 385	For each additional invention to be examined (37 CFR 1.129(b))	
1801 770	2801 385	Request for Continued Examination (RCE)	
1802 900	1802 900	Request for expedited examination of a design application	
Other fee (specify)			
*Reduced by Basic Filing Fee Paid			
SUBTOTAL (3) (\$)			330.00

SUBMITTED BY

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Signature	<i>Carlo Cotrone</i>	Date	September 13, 2004		

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